

Clozapine and Smoking

One of your patients has come into the pharmacy to collect their medication. You see they are also eligible for a medicines use review and the patient consents for this. Before you go in the consultation room, you look on their records and see the following regular prescriptions:

- Bisoprolol 1.25mg – once daily
- Sertraline 100mg – once daily

During the medicines use review you ask if the patient buys or uses any other medicines, herbal medicines or any other alternatives medicines.

“I do get my Clozaril® from the clinic”

At the end of the review, you ask if they would like any health living advice.

“I have been thinking about stopping smoking recently, could you give me some advice and is it possible to buy something today?”

Why is there no record of Clozaril® on the patient medication record?

Clozaril®, a brand of clozapine, is an atypical antipsychotic licensed for the patient with treatment resistant schizophrenia, those intolerant of other antipsychotic psychosis in Parkinson's disease (Joint Formulary Committee, 2016). Clozapine is a restricted drug and requires specialist supervision and the patient, prescriber, pharmacist and pharmacy require to be registered with a clozapine monitoring service (Novartis Pharmaceuticals UK Ltd, 2016). Although rare, clozapine has a life threatening, adverse effect; agranulocytosis – which is a lowering of granulocytes (a class of white blood cells) to an extent where there is increased risk of an acquiring an infection as the patient becomes immunocompromised. Therefore it is most likely that clozapine is prescribed by a psychiatrist and dispensed by a different pharmacy.

What actions can you take to ensure this information is available in the future?

Clozapine could be added on the notes section on the pharmacy medication record. This will allow you, in future, to prepare for medicines use reviews and check if there is an interaction when there is a new medication prescribed. One of the recommendations as part of the medicines use review is to ask the GP to ensure clozapine is listed on their system (as an hospital item) so interactions may appear here also and appear on the Summary Care Record for other healthcare professionals to view.

What healthy living advice would you provide for a patient taking clozapine?

Clozapine can cause weight gain and can cause impaired glucose tolerance and cause or exacerbate diabetes mellitus (Novartis Pharmaceuticals UK Ltd (2016). Therefore, tailored advice should include healthy eating and regular exercise. Clozapine also has anti-cholinergic side effects and can cause constipation, which

can be severe and there have been reports of fatal gastrointestinal obstruction. To prevent this, along with the above advice, the patient should be advised to eat fruit and vegetables and food with a high fibre content and adequate fluid intake.

Should you supply a smoking cessation product to the patient?

There is a significant pharmacokinetic interaction between the hydrocarbons in smoking and clozapine (Smith, Mican and Ellingrod, 2014). Clozapine is metabolised mainly by the cytochrome P450 enzyme, CYP1A2, which is induced by the hydrocarbons. Therefore, a higher clozapine dose is required to achieve a similar clozapine plasma level to a non-smoker. When the patient reduces their smoking, the intensity of this interaction will reduce, and the dose of clozapine will need to decrease. If not, the plasma levels of clozapine will accumulate and the patient is at risk of increased adverse events.

The patient should be referred to the mental health team so that they can be managed during the smoking cessation period. During this time, the dose would be carefully reduced whilst monitoring the patients' presentation and plasma concentration of clozapine. However as a community pharmacist, you can offer support to the patient during this time.

References

Joint Formulary Committee (2016). British National Formulary (online) London: BMJ Group and Pharmaceutical Press. Available at <http://www.medicinescomplete.com> (Accessed: 1 May 2016)

Novartis Pharmaceuticals UK Ltd (2016) Clozaril 25mg and 100mg tablets - summary of product characteristics (SPC) - (eMC). Available at: <https://www.medicines.org.uk/emc/medicine/1277> (Accessed: 1 May 2016)

Smith T., Mican L., and Ellingrod V. (2014). What to do when your patient who takes clozapine enters a smoke-free facility, *Current Psychiatry*, 13(5):47-48, 57.